UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,144	07/18/2003	Melissa Wiedemann	017750-420	1878

7590 10/20/2008

PATRICK C. KEANE
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER	
RASHID, DAVID	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
10/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/622,144	WIEDEMANN ET AL.	
	Examiner	Art Unit	
	DAVID P. RASHID	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 50-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 50-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 18, 2008 has been entered.

Amendments

[2] This office action is responsive to Amendment with RCE received on September 18, 2008. Claims 1-9 and 50-52 remain pending.

Response to Arguments

[3] Remarks filed September 18, 2008 with respect to 35 U.S.C. § 102 Rejections have been respectfully and fully considered, but not found persuasive.

Summary of Remarks

> However, in contrast to claim 1, Bonneau does not disclose or suggest that the one or more blocks corresponding to the mouth in image 1313 are processed according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the blocks of image 1311. On the contrary, Bonneau utilizes the same detection algorithm for the processing of the chain coded blocks in image 1309, the processing of the chain coded blocks in image 1311, and the processing of the chain coded blocks in image 1313. In particular, Bonneau discloses that edge detection processing is independently performed for each of images 1309, 1311 and 1313 to determine a Holder exponent h for the blocks in each image, respectively. Bonneau discloses that edges within one or more blocks of image 1311 are then matched with one or more blocks of image 1313, if the respective blocks satisfy a specific threshold for their respective Holder exponent h. In particular, Bonneau discloses that when the edge blocks are chain coded, the blocks which do not contain edges or have a small modules value are eliminated because only edges over a specified threshold are chain coded (see Column 21, lines 38-42).

(Applicant's Remarks at 7, September 18, 2008.)

Examiner's Response

However, *Bonneau et al.* discloses using various detection algorithms including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13. *Bonneau et al.* anticipates claim 1 using the selected "shape recognition technique" of fig. 13 from which processing the image at the first resolution using the identified object to identify another object is carried out. In addition, the another object identified according to the detection algorithm is based on a condition associated with the object identified at the second resolution - item 1332 is the condition used in the "shape recognition technique" of fig. 13. The condition is that those blocks identified at the second resolution are those blocks consistent with item blocks 1309 and 1313, and those blocks 1313 are consistent with both blocks 1311 and 1309. Blocks at the second resolution 1311 cannot exist if they do not correspond with those blocks at items 1309 and 1313, and thus a "condition" placed on those objects identified at the second resolution. Applicant is narrowing interpreting solely fig. 13, but has failed to appreciate the other detection algorithms used in *Bonneau et al.* (including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13) for which one in particular is selected to anticipate the claims.

Summary of Remarks

> Accordingly, Bonneau does not disclose or suggest that a detection algorithm is selected from among plural detection algorithms for processing the blocks in image 1313 (or images 1311 or 1309, for that matter). On the contrary, Bonneau discloses that the same algorithm, i.e., edge detection based on Holder exponents h, is utilized for processing all the blocks in images 1309, 1311 and 1313.

(Remarks at 7.)

Examiner's Response

However, *Bonneau et al.* is not limited to one detection algorithm but includes in fact at least two detection algorithms (the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13) – a plurality of detection algorithms.

Summary of Remarks

> Furthermore, Bonneau does not disclose or suggest that a detection algorithm is selected from among plural detection algorithms for processing the blocks in image 1313 based on a condition associated with the blocks in image 1311 identified at the second resolution (scale). Bonneau does not disclose or suggest that a detection algorithm is selected based on any condition associated with the blocks in image 1311. On the contrary, Bonneau discloses that the same edge detection algorithm is used for processing the blocks in images 1309, 1311 and 1313, independent of any condition associated with any blocks in an image of a lower resolution, e.g., images 1309, 1311. Bonneau does not disclose or suggest that an algorithm for processing any of the blocks in image 1313 has any relationship to a condition of blocks in image 1311 (or image 1309), because the same algorithm is used for processing all the blocks in images 1309, 1311 and 1313.

(Remarks at 7-8.)

Examiner's Response

See above argument.

Claim Rejections - 35 USC § 112

[4] The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[5] Claims 1-9 and 50-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 7-9 (emphasis added) cites "identif[ing] another object according to a detection algorithm selected from among plural detection algorithms based on a condition associated with the object identified at the second resolution", but it is unclear whether (i) the selection of the detection algorithm selected from the others is identifying another object based

on a condition based on a condition; or (ii) the detection algorithm is already selected and is identifying another object based on a condition, the detection algorithm used already being selected (past tense used). The first interpretation is the condition itself basing the selection of which detection algorithm to use. The second interpretation is that the detection algorithm has already been selected, and the identification of another object is based on the condition. The Examiner is using the second interpretation. Claim 52 has a similar argument. Claims 2-9 and 50-52 are rejected for failing to cure the deficiency of the claim from which they depend.

[6] Claim 52 recites the limitation "the yet another object" and "the third resolution" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

[7] 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-9 and **50-52** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A judicial exception claim is non-statutory for solely embodying an abstract idea, natural phenomenon, or law of nature. *See* M.P.E.P. § 2106(IV)(C)(2). However, a practical application of a judicial exception claim is a § 101 statutory claim "when it:

(A) 'transforms' an article or physical object to a different state or thing [(*i.e.*, a physical transformation, see below)]; or

(B) otherwise produces a useful, concrete and tangible result, based on the factors discussed below. . . ." *Id.*

§ 101 statutory transformations of intangible articles or physical objects must be physical transformations (*i.e.*, a physical component to the transformation must be involved). *See* M.P.E.P. § 2106(IV)(C)(2) (requiring the element "provides a transformation or reduction of an article to a different state of thing", a "practical application by physical transformation") *and* Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Official Gazette notice, 22 November 2005, Annex (II)(B)(iii); (III).

Image data (*e.g.,* a pixel) is a block of existing information as there is nothing tangible or physical about a image data itself (*i.e.*, a pixel could be equivalent to the value "101", or signal representation of an image). A pixel is more representative of an information value or signal (an image block more representative of an information matrix) than something tangible or physical.

Furthermore, a claim including a method-step for inputting or outputting a pixel or image, but not indicating physically where the pixel or image is sent does not indicate a physical transformation, nor a useful, concrete and tangible result. The claim would require further information as to indicate physical location (*e.g.*, memory, display) for a complete physical transformation of an image signal (*e.g.*, pixel, image block) article. Claims 1-16 are non-statutory for being a judicial exception, an abstract idea.

[8] In addition, while the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. *See* Clarification of "Processes" under 35 U.S.C. 101, Deputy Commissioner for Patent Examining Policy, John J. Love, May 15, 2008; *available at* http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/section_101_05_15_2008.pdf.

The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

[9] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[10] **Claims 1-3, 6** and **50-52** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,002,794 (issued Dec. 14, 1999, hereinafter "Bonneau et al.").

Regarding **claim 1**, *Bonneau et al.* discloses a method for identifying objects (the features/objects in item 1319 of fig. 13) in an image (fig. 13, item 1301) comprising:

receiving an image (fig. 13, item 1301) with a first resolution (fig. 13, item 1307);

processing the image at a second resolution (fig. 13, items 1305) to identify an object (fig. 13, items 1311, 1317) in the image at the second resolution (the object 1311, 1317 is identified at the second resolution); and

processing the image at the first resolution (fig. 13, item 1307) using the identified object (fig. 13, items 1311, 1317; identified object item 1311 at second resolution is used to identify those features of higher resolution (*e.g.* mouth) using items 1005, 1007, 1009 of fig. 10 (*i.e.*

matching features across scales, including matching the identified object item 1311 at second resolution to see consistency with another object at the first resolution)) to identify another object (the mouth and hair in item 1319 of fig. 13) according to a detection algorithm (the "shape recognition technique" of fig. 13) selected from among plural detection algorithms (*Bonneau et al.* has multiple detection algorithms including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13) based on a condition (fig. 13, item 1332) associated with the object (fig. 13, items 1311, 1317) identified at the second resolution (fig. 13, items 1305), wherein the first resolution (fig. 13, item 1307) is higher than the second resolution (fig. 13, items 1305).

Regarding **claim 2**, *Bonneau et al.* discloses the method of claim 1, further comprising:

processing the image at a third resolution (fig. 13, item 1303) to identify yet another object (fig. 13, items 1309, 1315), wherein the yet another object is employed in the identification of the object (items 1005, 1007, 1009 of fig. 10 (*refer to argument in claim 1*)) and the another object (the mouth and hair in item 1319 of fig. 13), wherein the second resolution (fig. 13, items 1305) is higher than the third resolution (fig. 13, item 1303).

Regarding **claim 3**, *Bonneau et al.* discloses the method of claim 2, further comprising:

downsampling (fig. 2, items 252, 254, 256 wherein downsampling from f by a factor of 4 is equivalent to downsampling from f/2 by a factor of 2 since all downsampled images originate from same image 201 and frequency 252) the image from the first resolution (fig. 13, item 1307) to the second resolution (fig. 13, items 1305); and

downsampling (fig. 2, items 252, 254, 256 wherein downsampling from f by a factor of 4 is equivalent to downsampling from f/2 by a factor of 2 since all downsampled images originate

from same image 201 and frequency 252) the image from the second resolution (fig. 13, items 1305) to the third resolution (fig. 13, items 1303) .

Regarding **claim 6**, *Bonneau et al.* discloses the method of claim 1, further comprising:

determining whether the object and the another object are desired objects based upon a context associated with the image (fig. 10, item 1009; 20:50-21:28).

Regarding **claim 50**, *Bonneau et al.* discloses wherein the detection algorithm for identifying the other object (fig. 13, item 1309) at the first resolution (fig. 13, item 1307) is automatically selected ("shape recognition technique" of fig. 13) from among the plural detection algorithms (*Bonneau et al.* has multiple detection algorithms including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13).

Regarding **claim 51**, *Bonneau et al.* discloses wherein the plural detection algorithms (*Bonneau et al.* has multiple detection algorithms including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13) include at least two algorithms respectively corresponding to gray level co- occurrence identification, linear object identification, primitive extraction identification, cloud masking, river masking, activity detection identification, edge extraction identification (the "pattern matching technique" of fig. 11 uses edge extraction identification), gradient magnitude thresholding, busy mask identification, gradient direction edge thinning, line extraction identification, segmentation (the "shape recognition technique" of fig. 13 uses segmentation), region merging, collinear line identification, parallel line identification, parallel edge identification, intensity valuation identification, intensity variance identification, small object detection, morphological filtering, structure detection, lines of communication detection, and contextual line reasoning.

Regarding **claim 52**, *Bonneau et al.* discloses wherein the processing of the image at the first resolution (fig. 13, item 1307) includes using the object identified at the second resolution (the object 1311, 1317 is identified at the second resolution) to identify the other object (the mouth and hair in item 1319 of fig. 13) according to a detection algorithm (the "shape recognition technique" of fig. 13) selected from among plural detection algorithms (*Bonneau et al.* has multiple detection algorithms including at least the "pattern matching technique" of fig. 11 and "shape recognition technique" of fig. 13) based on a condition (fig. 13, item 1332) associated with the object identified at the second resolution (the object 1311, 1317 is identified at the second resolution) and a condition (fig. 13, item 1332) associated with the yet another object (the object 1309, 1315 is identified at the third resolution) identified at the third resolution (fig. 13, item 1303).

Claim Rejections - 35 USC § 103

[11] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[12] **Claims 4-5** and **7** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bonneau et al.* in view of U.S. Patent No. 5,742,710 (issued Apr. 21, 1998, hereinafter "Hsu et al.")

Regarding **claim 4**, while *Bonneau et al.* discloses wherein the processing is performed as a function of a type of facial feature in the image (fig. 13), *Bonneau et al.* does not teach wherein the function is of a type of terrain.

Hsu et al. discloses a process for identifying simple and complex objects from terrain types (fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the facial feature type of *Bonneau et al.* to be terrain type as taught by *Hsu et al.* "for identifying and/or extracting an object or group of objects from one or more fused images and map data.", *Hsu et al.*, 1:9-10.

Regarding **claim 5**, while *Bonneau et al.* discloses wherein the type of facial feature is identified using a priori information ("stored information" in 20:50-52) and a gray level co-occurrence identification (*Bonneau et al.* discloses that the image could be grey-scale (1:42-44) with high frequency thresholds below a certain grey scale level (4:12-13) which all suggest a "gray level co-occurrence identification"), *Bonneau et al.* does not teach wherein the type is of a terrain type.

Hsu et al. discloses a process for identifying simple and complex objects from terrain types (fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the type of *Bonneau et al.* to be terrain type as taught by *Hsu et al.* "for identifying and/or extracting an object or group of objects from one or more fused images and map data.", *Hsu et al.*, 1:9-10

Regarding **claim 7**, while *Bonneau et al.* discloses wherein the object is a facial feature, *Bonneau et al.* does not teach wherein the object is a river.

Hsu et al. discloses a process for identifying simple and complex objects that includes wherein the object to be identified is a river (5:57-69).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the object to be identified as taught by *Bonneau et al.* to be a river as taught by *Hsu et al.* "for identifying and/or extracting an object or group of objects from one or more fused images and map data.", *Hsu et al.*, 1:9-10.

[7] **Claims 8-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bonneau et al.* in view of U.S. Patent No. 6,084,989 (issued Jul. 4, 2000, hereinafter "Eppler").

Regarding **claim 8**, while *Bonneau et al.* discloses the method of claim 2, wherein step of processing the image at the third resolution (fig. 13, item 1303) comprises:

identifying portions of the image containing a face outline (face outline in item 1301 of fig. 13);

and identifying portions of the image containing other potential face outlines (item 1303 algorithm suggests other face outlines of the same size will also be identified), wherein if portions of the image are identified which contain a face outline or other potential face outlines, identifying the face outline or other potential face outlines as the yet another object (refer to references/arguments cited in claim 2), *Bonneau et al.* does not teach wherein the face outline are clouds and wherein other face outlines are bodies of water.

Eppler discloses a method for automatically determining the position of landmarks in images from satellite-based imaging systems (fig. 1) wherein clouds are eliminated by upsampling an image and thus increasing the resolution such that the clouds are no longer visible (3:10-21). In effect, upsampling to eliminate the clouds identifies the clouds in a "lowest resolution group".

Eppler also describes being a higher resolution to the image once an island or lake has been identified, thus placing a body of water in a "lowest resolution group" (13:16-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the facial feature and other facial features of *Bonneau et al.* to include clouds and bodies and water respectively as taught by *Eppler*, and wherein if portions of the image are identified which contain clouds or bodies of water, it would have been obvious to one of ordinary skill in the art at the time the invention was made for identifying the clouds or bodies of water as the "lowest resolution group" as taught by *Eppler* to be the yet another object as taught by *Bonneau et al.* so that to "provide[s] for a system and method that processes a digitized image generated by a satellite-based imaging system and generates error values indicative of the misregistration between the actual position of the landmarks in the digitized images and their desired position. The error values are then used to adjust the optical line of sight of the imaging system to produce optimum registration.", *Eppler*, 1:66-2:5 as well as "the landmark mask and the upsampled image patch containing the landmark are processed using an image enhancement algorithm that increases the contrast and robustness of the images by converting pixel gray scale values into likelihood ratios, that is whether the each pixel is part of the landmark or part of the land or water surrounding the landmark. Using the image enhancement algorithm, the computed likelihood ratios along with the landmark mask are processed by the matching algorithms to generate the offset errors and match figure of merit.", *Eppler*, 2:40-49.

Regarding **claim 9**, while *Bonneau et al.* discloses the method of claim 8, wherein the identified portions of the image containing face outlines are employed in the identification of objects in the image at the second resolution and other objects in the image at the first resolution (refer to references/arguments cited in claim 2), *Bonneau et al.* does not teach wherein the face outline are clouds and wherein other face outlines are bodies of water.

Eppler discloses a method for automatically determining the position of landmarks in images from satellite-based imaging systems (fig. 1) wherein clouds are eliminated by upsampling an image and thus increasing the resolution such that the clouds are no longer visible (3:10-21). In effect, upsampling to eliminate the clouds identifies the clouds in a "lowest resolution group".

Eppler also describes being a higher resolution to the image once an island or lake has been identified, thus placing a body of water in a "lowest resolution group" (13:16-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the facial feature and other facial features of *Bonneau et al.* to include clouds and bodies and water respectively as taught by *Eppler*, and wherein if portions of the image are identified which contain clouds or bodies of water, it would have been obvious to one of ordinary skill in the art at the time the invention was made for identifying the clouds or bodies of water as the "lowest resolution group" as taught by *Eppler* to be the yet another object as taught by *Bonneau et al.* so that to "provide[s] for a system and method that processes a digitized image generated by a satellite-based imaging system and generates error values indicative of the misregistration between the actual position of the landmarks in the digitized images and their desired position. The error values are then used to adjust the optical line of sight of the imaging system to produce optimum registration.", *Eppler*, 1:66-2:5 as well as "the landmark mask and the upsampled image patch containing the landmark are processed using an image enhancement algorithm that increases the contrast and robustness of the images by converting pixel gray scale values into likelihood ratios, that is whether the each pixel is part of the landmark or part of the land or water surrounding the landmark. Using the image enhancement algorithm, the computed

likelihood ratios along with the landmark mask are processed by the matching algorithms to generate the offset errors and match figure of merit.", *Eppler*, 2:40-49.

Conclusion

[10] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

[11] Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-74155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

David P Rashid
Examiner
Art Unit 26244

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624